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EXAMINER	
NGO, NGUYEN HOANG	
ART UNIT	**PAPER NUMBER**
2663	

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/004,313	MACKIEWICH ET AL.	
	Examiner	Art Unit	
	Nguyen Ngo	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-17 and 19-48* is/are rejected.

7)☒ Claim(s) *8 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-7, 9-17, 19-20, 26-30, 33-35, 41-45, 47, and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by Kamo (US 2004/0017812), hereinafter referred to as Kamo.

Regarding claim 1, Kamo discloses a method for a system of a plurality of bridges for a point-to-multipoint transmission through SVCs (a method for delivering multicast data traffic, page 3 [0051])). Kamo further discloses from figure 1 and 2 of a packet which is inputted to bridge 10 from the LAN 1, and which is transmitted to interface 19 to the SVC for the point-to-multipoint transmission, through the ATM network (originating in a broadcast-based computer network (LAN) to a plurality of destinations (multipoint) on a connection based network (ATM), page 4 [0077]). Kamo further discloses;

of a bridge which connects the LAN (broadcast) and the ATM network (connection-based network, bridge 10 of figure 1 and 2). Kamo further discloses from figure 2, of an interface 19, which provides multipoint connections to bridge 11, 12, and 13 (the bridge providing ports (interface for connections to bridge 11, 12, and 13) at

which virtual channels (SCVs) in the connection-based network can terminate (terminating bridges).

that each of the bridges connected to the ATM network sets the point-to-multipoint transmission SVC (setting up a point to multipoint virtual channel in the connection based network, page3 [0051]). Kamo further discloses that bridge 10 serves as a root, while bridges 11-13 serves as leaves (the point-to-multipoint virtual channel having a root at a first one of the ports (interface to LAN1 at bridge 10) and a plurality of leaves at destination nodes in the connection based network (bridge 11-13), page3 [0051]).

of a address management table of each bridge (a filtering database associated with each bridge, figure 2) that retains as entries serial numbers, connections (VPI/VCI) and physical addresses of the bridges 10-13 (associating the first one of the ports (correlating to bridge ID) with one or more multicast addresses (connection identifier), page 3 [0060] and page 7 [0122])).

of transmitting frames/cell through bridge 10 by comparing the outgoing VPI/VCI and the leaf ID and making each output circuit interface unit transmit the cell to only SVC corresponding VPI/VCI (at the bridge forwarding (transmitting) multicast data frames (cells) addressed to the multicast address (IDs) and originating in the broadcast-based computer network (LAN1) to the first one of the ports, figure 21).

Regarding claim 2, Kamo discloses each LANs 1-4 be based on an Ethernet network (page 2 [0048]).

Regarding claim 3, Kamo discloses of an ATM network (100 of figure 1) with a point to multipoint connection through SVCs (page 3 [0051]) and bridge 10 being connected to LAN 1 serving as the root (page 3 [0051]).

Regarding claim 4, Kamo discloses each LANs 1-4 be based on an Ethernet network (page 2 [0048]).

Regarding claim 5, Kamo discloses that the respective bridges 10-13 are connected to other bridges through SVCs for a point-to-point transmission (point-to-point virtual channel, figure 23 and page3 [0051]).

Regarding claim 6 and 7, Kamo discloses from figure 7 of a bridge 22 correlating to bridge 10 as previously discussed, that uses separate connections for the point to point transmission and the point to multipoint transmission (forwarding data traffic (transmissions) destined for the first one of the destination nodes which is not associated with the one or more multicast address (a point to point connection) to the second one of the ports (point to point port being different from point to multicast port)).

Regarding claim 9 and 19, Kamo discloses from figure 1 and 2 that the association of the multicast address and the first one of the ports be a static association (page 7 [0122]).

Regarding claim 10, Kamo discloses that the bridge releases all resources corresponding to the rate target connection, and allocates the released resources to other connections (page 7 [0121]). It is noted that the releasing of resources correlate to the disabling of bridge port to bridge port forwarding involving the first one of the ports (interface).

Regarding claim 11, Kamo discloses from figure 1 of a network system in which there are provided LANs 1-4 with an ATM network and that the LANs 1-4 function as being logically one LAN connected through bridges 10-13 to the ATM network (page 2 [0048]).

Regarding claim 12, Kamo discloses each LANs 1-4 be based on an Ethernet network (page 2 [0048]).

Regarding claim 13, Kamo discloses of an ATM network (100 of figure 1) with a point to multipoint connection through SVCs (page 3 [0051]) and bridge 10 being connected to LAN 1 serving as the root (page 3 [0051]).

Regarding claim 14, Kamo discloses each LANs 1-4 be based on an Ethernet network (page 2 [0048]).

Regarding claim 15, Kamo discloses that the respective bridges 10-13 are connected to other bridges through SVCs for a point-to-point transmission (point-to-point virtual channel, figure 23 and page3 [0051]).

Regarding claim 16 and 17, Kamo discloses from figure 7 of a bridge 22 correlating to bridge 10 as previously discussed, that uses separate connections for the point to point transmission and the point to multipoint transmission (forwarding data traffic (transmissions) destined for the first one of the destination nodes which is not associated with the one or more multicast address (a point to point connection) to the second one of the ports (point to point port being different from point to multicast port)).

Regarding claim 20, Kamo discloses that the bridge releases all resources corresponding to the rate target connection, and allocates the released resources to other connections (page 7 [0121]). It is noted that the releasing of resources correlate to the disabling of bridge port to bridge port forwarding involving the first one of the ports (interface).

Regarding claim 26, 27, 28, 29, 33, and 34, Kamo discloses the interface 15 receives an input of a frame sent from LAN1, segments the packet adapted to a storage in an information field of a cell based on AAL TypeS (carrying the frames in cells according to the AAL5 protocol) in accordance with an AAL protocol, and transmit the cell to a

destination bridge (page 3 [0054]). It should be noted that frames be variable in size as this is well known in the art.

Regarding claim 30, Kamo discloses each of the bridges incorporates a spanning tree algorithm (page3 [0050]).

Regarding claim 35, Kamo discloses the destination nodes ad the root of the virtual channel be located within a single device (figure 1 and figure 2).

Regarding claim 41, Kamo discloses a bridge device comprising;

an interface 15 for receiving Ethernet frames from LAN1 (a network interface (interface 15) configured to receive variable sized data frames (Ethernet frames) from a first network (LAN1), page 2 [0048]).

an interface 19 connecting bridges 11-13 (a plurality of bridge ports, figure 2).

an ATM switching network that transmits cells forwarded from respective bridges to a destination bridge (a switching fabric (ATM fabric) configurable to provide data connections (point-to-point and point-to-multipoint connections) between the bridge ports and a plurality of external data connections (LAN connections) each associated with one ore more output interfaces (interface 19 and 15), page 3 [0049]).

that each of the bridges connected to the ATM network sets the point-to-multipoint transmission SVC (point-to-multipoint virtual channel configured in the switching fabric (ATM), page3 [0051]). Kamo further discloses that bridge 10 serves as

a root, while bridges 11-13 serves as leaves (the point-to-multipoint virtual channel having a root at a first one of the ports (interface to LAN1 at bridge 10) and a plurality of leaves (bridge 11-13), the leaves each connected to one of the external data connections (LANs) page3 [0051]).

of a address management table of each bridge (a filtering database associated with each bridge, figure 2) that retains as entries serial numbers, connections (VPI/VCI) and physical addresses of the bridges 10-13 (associating the first one of the bridge ports (correlating to bridge ID) with one or more multicast addresses (connection identifier), page 3 [0060] and page 7 [0122])).

Regarding claim 42, Kamo discloses of an ATM network (100 of figure 1) with a point to multipoint connection through SVCs (page 3 [0051]) and bridge 10 being connected to LAN 1 serving as the root (page 3 [0051]).

Regarding claim 43, Kamo discloses that the respective bridges 10-13 are connected to other bridges through SVCs for a point-to-point transmission (point-to-point virtual channel configured in the switching fabric, figure 23 and page3 [0051]). Figure 7 further shows the first and second ones of the eternal data connections extending to a common destination node.

Regarding claim 44, Kamo discloses from figure 1, 2, and 21 of a static entry (from table) and that the bridge is configured to forward to the first port only those frames which have a multicast address which matches the static entry (figure 21).

Regarding claim 45, Kamo discloses a network system;

in which LANs 1-4 are connected with an ATM network (a plurality of segments (LANs) interconnected by a connection-based network (ATM), page2 [0048]).

of bridges which connect the LANs (broadcast) and the ATM network (a bridge associated with each of the segments (bridge to each LAN), each bridge connecting a corresponding one of the segments (LANs) to the connection-based network (ATM), figure 1 and 2).

of bridge 10 connecting LAN1 with the ATM network (a first bridge associated with a first one of the segments, figure 1) and that bridge 10 comprises interface 19 connected to bridges 11-13 through the ATM network by means of SVC (comprising a plurality of bridge ports (interface 19) each capable of being connected to a virtual channel (SVC) in the connection based network (ATM), figure 2).

that each of the bridges connected to the ATM network sets the point-to-multipoint transmission SVC (point-to-multipoint virtual channel in the connection based network, page3 [0051]). Kamo further discloses that bridge 10 serves as a root, while bridges 11-13 serves as leaves (the point-to-multipoint virtual channel having a root at a first one of the ports (interface to LAN1 at bridge 10) and a plurality of leaves (bridge 11-

13), each of the leaf nodes connected to one of the bridges corresponding to another one of the segments (other LANs), page3 [0051]).

that the respective bridges 10-13 also are connected to other bridges through SVCs for a point-to-point transmission (point-to-point virtual channel in the connection based network, the p-to-p virtual channel connecting a second one of the bridge ports to one of the bridges corresponding to another one of the segments (shown in figure 7), figure 7 and page3 [0051]).

Regarding claim 47, Kamo discloses each LANs 1-4 be based on an Ethernet network (page 2 [0048]).

Regarding claim 48, Kamo discloses of an ATM network (100 of figure 1) with a point to multipoint connection through SVCs (page 3 [0051]) and bridge 10 being connected to LAN 1 serving as the root (page 3 [0051]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 21-25, 31,32, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamo (US 2004/0017812) in view of Arora et al. (US 5812552), hereinafter referred to as Kamo and Arora.

Regarding claim 21, 22, and 46 Kamo fails to disclose the specific limitation of having the point-to-point virtual channel comprise a bidirectional virtual channel. Kamo however discloses a setup signaling process between bridge 22 (root) and bridge 23 (leaf) of figure 7, involving sending control information between the two (page 4 [0067]-[0071]), thus providing the motivation to efficiently use the point to point connection between the bridges to properly set up the transmission.

Arora further discloses a bi-directional point-to-point connection that is used for control data (col5 lines 61-66). It would thus be obvious to incorporate the use of a bi-directional point-to-point connection comprising a virtual channel as disclosed by Arora into the method for a system of a plurality of bridges for a point-to-multipoint and point-to-point transmission through SVCs as disclosed by Kamo, to efficiently setup and control the transmission between two bridges (root and leaf) through the use of the

point-to-point connection. It should be noted that multicast data transmission correlates to point-to-multipoint transmissions through virtual channels, which are unidirectional in nature as known in the art.

Regarding claim 23, 24, and 25, Kamo fails to disclose the specific limitations but however discloses using an ATM network for multimedia services with proper QoS (col1 [0002]), thus providing the motivation to efficiently transmit multimedia service throughout the network according to a Quality of Service.

Arora further discloses of the multimedia application be transmitted by multicasting (point-to-multipoint) in which one end station is a transmitter and all other are receivers, and that the multimedia application include audio, video, and control information (col9 lines 47-58). It would thus be obvious to incorporate the different types of multimedia data as disclosed by Arora into the method for a system of a plurality of bridges for a point-to-multipoint and point-to-point transmission through SVCs as disclosed by Kamo, to efficiently transmit different types of multimedia services throughout the network according to a QoS.

Regarding claim 31, 32, Kamo fails to disclose the specific limitations of configuring the point-to-point and point-to-multipoint virtual channels to provide levels of QoS, which are different from another. Kamo however discloses using an ATM network for multimedia services with proper QoS (col1 [0002]), thus providing the motivation to

efficiently transmit multimedia service throughout the network according to a Quality of Service.

Arora further discloses offering guaranteed QoS on a per connection bases (page1 lines 24-30). It should be noted that a per connection bases correlates to a connection of point-to-point with a specific QoS and a point-to-multipoint with a different QoS. It would thus be obvious to incorporate the method of providing different QoS depending on the type of connection as disclosed by Arora into the method for a system of a plurality of bridges for a point-to-multipoint and point-to-point transmission through SVCs as disclosed by Kamo, to efficiently transmit data throughout the network according to a QoS.

6. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamo (US 2004/0017812) in view of Patra et al. (US 6816489), hereinafter referred to as Kamo and Patra.

Regarding claim 36, Kamo discloses a method a method for a system of a plurality of bridges for a point-to-multipoint transmission through SVCs (a method for carrying multicast data traffic, page 3 [0051])). Kamo further discloses from figure 1 and 2 of a packet which is inputted to bridge 10 from the LAN 1, and which is transmitted to interface 19 to the SVC for the point-to-multipoint transmission, through the ATM network (page 4 [0077]) to destination bridges 11 and 12 that are apart of LAN 1 and 2 which function as being logically one LAN connected through bridges 10-13 to the ATM

network (originating at a source segment of a virtual network (LAN1) to a plurality of destination segments of the virtual network (LAN 2 and LAN3), the source and plurality of destination segments each connected to a connection-based network (ATM) by a bridge, figure 1 and page 2[0048]). Kamo further discloses from figure 2;

of bridge 10, having a interface 15 (port) that is connected to LAN1 (at a first bridge connected to the source segment) and of a address management table of each bridge (figure 2) that retains as entries serial numbers, connections (VPI/VCI) and physical addresses of the bridges 10-13 (associating at least one multicast address (identifiers) with a first remote interface port (correlating to bridge ID), page 3 [0060] and page 7 [0122])).

from figure 2, of an interface 19 which provides multipoint connections to bridge 11, 12, and 13 at which virtual channels (SCVs) in the connection-based network can terminate (provisioning in the connection-based network (ATM) a point to multipoint virtual channel having a root endpoint at the remote interface port (LAN1, page 3 [0051]) and a plurality of leaf nodes (bridge 11-13, page 3 [0051])).

of inputting to a packet to bridge 10 from LAN 1 with a MAC address and leaf ID (directing multicast data addressed to the at least one multicast address (leaf ID) to the first remote interface bridge port (interface 15 of figure 2), figure 10 and figure 18 and page 4 [0077]).

and transmitting the packet to the leaf bridges as identified (page 7 [0125]) by the point to multipoint virtual connections (SCVs).

Kamo however fails to disclose of having the remote interface port be an ingress only port, but however discloses of an upward direction (LAN1 to ATM) and a backward direction (ATM to LAN1) buffers corresponding to interface 15 and 19 (page3 [0055]) and thus provides the motivation to distinguish between the direction of packet flow in a bridge for correct transmission through the ATM network.

Patra however discloses that packets are sent from an ingress port to one or more egress ports, also known as egress interfaces and that the connection between the ingress port and the switch fabric (ATM) is the incoming virtual circuit and the connection between the switch fabric and egress port is the outgoing virtual circuit (page 2 lines 25-41). It would thus be obvious to a person skilled in the art to incorporate the ingress and egress ports as disclosed by Patra into the method for a system of a plurality of bridges for a point-to-multipoint and point-to-point transmission through SVCs as disclosed by Kamo, to efficiently distinguish between the direction of packet flow through the switch fabric (ATM).

Regarding claim 37, the combination of Kamo and Patra discloses all the limitation of claim 37, more specifically, Kamo discloses bridges 11-13 serve as leaves connected to interface 19 (leaf endpoints are each at a port on the bridge (interface 19) associated with one of the destination segments (LANS 2 or 3) and setting the ports as egress-only ports, page3 [0051]).

7. Claims 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamo (US 2004/0017812) in view of Patra et al. (US 6816489), further in view of Arora et al. (US 5812552), hereinafter referred to as Kamo, Patra and Arora.

Regarding claim 38 and 39, Kamo and Patra fail to disclose the specific limitation of having a bidirectional point-to-point virtual channel in the connection-based network. Kamo however discloses a setup signaling process between bridge 22 (root) and bridge 23 (leaf) of figure 7, involving sending control information between the two (page 4 [0067]-[0071]), thus providing the motivation to efficiently use the point to point connection between the bridges to properly transmit a packet.

Arora further discloses a bi-directional point-to-point connection that is used for control data (col5 lines 61-66). It would thus be obvious to incorporate the use of a bi-directional point-to-point connection comprising a virtual channel as disclosed by Arora into the method for a system of a plurality of bridges for a point-to-multipoint and point-to-point transmission through SVCs using ingress and egress ports as disclosed by Kamo and Patra, to efficiently setup and control the transmission between two bridges (root and leaf) through the use of the point-to-point connection. It should be noted that a plurality of bidirectional point-to-point virtual channels in the ATM network be used as seen from figure 7, bridge 23-25 being one of the destination segments.

Regarding claim 40, the combination of Kamo, Patra, and Arora discloses all the limitation of claim 40, more specifically Kamo discloses the interface 15 receives an

input of a frame sent from LAN1, segments the packet adapted to a storage in an information field of a cell based on AAL TypeS (encapsulating the multicast data into ATM cells) in accordance with an AAL protocol, and transmit the cell to a destination bridge (page 3 [0054]).

Allowable Subject Matter

8. Claims 8 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Burnett et al. (US 544702), Virtual Network Using ATM.

b) Krause (US 6005864), Protocol For Optimized Multicast Services For A Connection Oriented Network Providing LAN Emulation.

c) Kshirsagar et al. (US 6016319), Communications System For Transmission Of Datagram Packets Over Connection-Oriented Networks.

d) Povisen et al. (US 6041063), High Availability Scaleable Bandwidth, Mulitport ATM-Emulated LAN Interface.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Ngo whose telephone number is (571) 272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

N.N.
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